

WHAT IS CLAIMED IS:

- 1 1. A photocurable silver composition consisting essentially of:
2 a photocurable organic mixture;
3 a photoinitiator;
4 silver powder; and
5 silver flakes in an amount of at least 20% relative to the weight
6 of the silver powder, the photocurable silver composition when illuminated with
7 ultraviolet (UV) light cures into a silver coating.
- 1 2. The photocurable silver composition of claim 1 wherein the
2 photocurable organic mixture comprises an aliphatic acrylated urethane oligomer.
- 1 3. The silver composition recited in claim 2, wherein the aliphatic
2 acrylated urethane oligomer is present in an amount of about 3% to 8% of the silver
3 composition.
- 1 4. The silver composition recited in claim 2, wherein the aliphatic
2 acrylated urethane oligomer is present in an amount of about 8% of the silver
3 composition.
- 1 5. The photocurable silver composition of claim 2 wherein the
2 photocurable organic mixture further comprises an acrylated epoxy oligomer.
- 1 6. The silver composition recited in claim 5, wherein the
2 acrylated epoxy oligomer is present in an amount of about 2% to 4% of the silver
3 composition.
- 1 7. The silver composition recited in claim 5, wherein the
2 acrylated epoxy oligomer is present in an amount of about 3% of the silver
3 composition.

1 8. The photocurable silver composition of claim 5 wherein the
2 photocurable organic mixture further comprises an isobornyl acrylate monomer.

1 9. The silver composition recited in claim 8, wherein the
2 isobornyl acrylate monomer is present in an amount of about 4% to 8% of the silver
3 composition.

1 10. The silver composition recited in claim 8, wherein the
2 isobornyl acrylate monomer is present in an amount of about 5% of the silver
3 composition.

1 11. The silver composition recited in claim 8, wherein the
2 photocurable organic mixture further comprises a flow promoting agent.

1 12. The silver composition recited in claim 11, wherein the flow
2 agent is present in an amount of about 0.1% to 2% of the silver composition.

1 13. The silver composition recited in claim 11, wherein the flow
2 agent is present in an amount of about 1% of the silver composition.

1 14. The silver composition recited in claim 1, wherein the silver
2 powder is present in an amount of about 50% to 60% of the silver composition.

1 15. A silver composition as recited in claim 1, wherein the silver
2 powder is present in an amount of about 52% of the silver composition.

1 16. The silver composition recited in claim 1, wherein the silver
2 flakes are present in an amount of about 25% to 35% of the silver composition.

1 17. The silver composition recited in claim 1, wherein the silver
2 flakes is present in an amount of about 5% of the silver composition.

1 18. The silver composition recited in claim 1, wherein the
2 photoinitiator is present in an amount of about 3% to 6% of the silver composition.

1 19. The silver composition recited in claim 1, wherein the
2 photoinitiator is present in an amount of about 5% of the silver composition.

1 20. A method for depositing a silver coating on a substrate, the
2 method comprising:

3 a first step of applying to the substrate a composition comprising:

4 an aliphatic acrylated urethane oligomer;

5 an acrylated epoxy oligomer;

6 an isobornyl acrylate monomer;

7 a photoinitiator;

8 silver powder; and

9 silver flakes in an amount of at least 20% relative to the
10 weight of the silver powder; and

11 a second step of photocuring by exposure to light of a wavelength
12 effective to cure said composition.

1 21. A method as recited in claim 20, wherein the first step
2 comprises spraying the silver-containing fluid-phase composition onto the substrate.

1 22. A method as recited in claim 20, wherein the first step
2 comprises applying the silver-containing fluid-phase composition to the substrate
3 using a screen printing technique.

1 23. A method as recited in claim 20, wherein the first step
2 comprises applying the silver-containing fluid-phase composition to the substrate
3 using a flexographic technique.